R. J. COLLEGE of Arts, Science & Commerce (AUTONOMOUS)

(Hindi Vidya Prachar Samiti's RAMNIRANJAN JHUNJHUNWALA COLLEGE of Arts, Science & Commerce)

Opposite Ghatkopar Railway Station, Ghatkopar (West), Mumbai 400086, Maharashtra, INDIA.

Website: www.rjcollege.edu.in   Email: rjcollege@rjcollege.edu.in   Tel No: +91 22 25151763   Fax No: +91 22 25150957

College is recognized under Section 2(f) & 12(B) of the UGC Act, 1956

Affiliated to UNIVERSITY OF MUMBAI II NAAC Re-Accredited 'A' Grade (CGPA: 3.50)

Department of Information Technology
Value-added Course: VMware vSphere 6.7

Notice

The department of Information Technology is conducting a value-added course on VMware vSphere 6.7 of 2 credits from 10th May 2021 to 26th July 2021 for MSc IT Part I students. The course covers basic and advanced topics which come under the umbrella of VMware vSphere 6.7. Interested students are requested to register for the same.

Schedule

Date	Topic	Assignment
10/05/2021	vSphere Essentials	Assignment 01 - 1hr
12/05/2021	vSphere Essentials	
19/05/2021	Deploying and Managing Virtual Machines and hosts	
31/05/2021	Networking	Assignment 02 - 1hr 30mins
16/06/2021	Networking	
19/06/2021	Networking	
21/06/2021	Storage	Assignment 03 - 1hr 30mins
23/06/2021	Storage	
28/06/2021	Storage	
30/06/2021	Updates and Upgrades	Assignment 04 - 1hr
07/07/2021	Availability	
12/07/2021	Security	
19/07/2021	Backup and Recovery	Assignment 05 - 1hr
19/07/2021	Troubleshoot	
26/07/2021	Resource management	

Lecture Link:
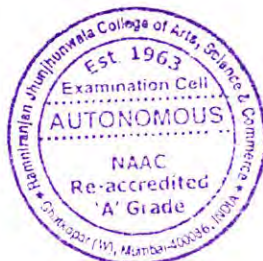
Google Meet joining info: VMware vSphere
Video call link: https://meet.google.com/qwr-rjqk-wjv
Or dial: (US) +1 205-832-1209 PIN: 127 092 783#
More phone numbers: https://tel.meet/qwr-rjqk-wjv

In-Charge

Principal

ICPRINCIPAL
RAMNIRANJAN JHUNJHUNWALA COLLEGE
OF ARTS, SCIENCE & COMMERCE (AUTONOMOUS)
Ghatkopar (W), Mumbai-400 086, Maharashtra, INDIA

2019: Star College Status by DBT
2008: Best College by University of Mumbai   **2010:** IMC RBNQ Award 'Performance Excellence' for the year 2009
2011: 'Best Teacher Award' by Government of Maharashtra   **2013:** DST-FIST   **2014:** DBT STAR College
2013 & 2014: 'Jagar Jaanivancha Award' by Govt. of Maharashtra   **2016:** ISO 14001:2015 **2016:** ISO 9001:2015 **2017:** ISO 27001:2013
2018: Autonomous Status by University Grants Commission (No. F. 22-1/2018(AC) - 28.05.2018) & by University of Mumbai (No.Aff./ICD/18-19/440 - 08.06.2018)

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Department of Information Technology
Report of Value-added Course: VMware vSphere 6.7

Course Code: RJITC07
Course Name: VMware vSphere 6.7
Year of Offering: 2020-2021
Organized by: Department of Information Technology
Duration of Course: 10-05-2021 to 26-07-2021
Number of students enrolled in the year: 21
Number of Students successfully completed the course in the year: 10
Teachers Involved: Prof. Bharati Bhole and Prof. Aditi Prajapati
Venue: Online Google Meet platform
Participants: MSc IT Part I

Report

The department of Information Technology have conducted a value-added course on VMware vSphere 6.7 of 2 credits from 10th May 2021 to 26th July 2021 for MSc IT Part I students. The course covered basic and advanced topics which come under the umbrella of VMware vSphere 6.7. Both theoretical and practical implementation were explained during the course. The students are evaluated base on their attendance, assignment submission and MCQ tests.

List of Students who have completed the course

ROLL NO	LAST NAME	FIRST NAME	CREDITS
1	AGALE	SNEHA	2
3	BAKHTIANI	RAHUL	2
5	CHOUHAN	AKANSHA	2
6	DAWALE	NEHA	2
8	GADGE	BHAGYASRI	2
10	MISHRA	SONIYA	2
11	PAWAR	SNEHA	2
12	RAJBHAR	SUREKHA	2
13	RAJPAL	DIVYYA	2
14	SHARMA	SIMRAN	2

PRINCIPAL
I/c PRINCIPAL
RAMNIRANJAN JHUNJHUNWALA COLL
OF ARTS, SCIENCE & COMMERCE (AUTONOM
Ghatkopar (W), Mumbai-400 086, Maharashtra,

Department of Information Technology
Value-added Course: VMware vSphere 6.7
Attendance Report

ROLL NO	LAST NAME	FIRST NAME	10/5/21	12/5/21	19/5/21	31/5/21	16/6/21	19/6/21	21/6/21	23/6/21	28/6/21	30/6/21	07/7/21	12/7/21	19/7/21	26/7/21
1	AGALE	SNEHA	P	P		P	P	P	P				P	P	P	
3	BAKHTIANI	RAHUL	P	P				P	P	P		P			P	
5	CHOUHAN	AKANSHA	P	P			P			P					P	
6	DAWALE	NEHA		P		P	P	P	P		P	P	P			
7	DEOKAR	GAURI						P								
8	GADGE	BHAGYASRI			P		P								P	
9	MISHRA	PREETI				P		P								
10	MISHRA	SONIYA												P	P	
11	PAWAR	SNEHA	P						P							
12	RAJBHAR	SUREKHA					P						P	P		
13	RAJPAL	DIVYA	P				P				P	P				
14	SHARMA	SIMRAN	P	P	P	P	P	P	P	P	P	P	P		P	P
15	SIDDIQUI	UZMA	P			P	P		P	P	P	P		P		
16	TIWARI	GAURAV														
18	UPADHYAY	SHREYANSH				P	P	P			P	P		P	P	P
19	VISHWAKARMA	HIMANSHU								P					P	
20	YADAV	PRIYA														
21	YADAV	SHWETA														
22	KARERU	MANJUNATH	P	P		P									P	
23	RAI	PRATIK	P	P											P	
25	GADGE	KALPESH			P	P										

I/C PRINCIPAL
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Department of Information Technology
Value-added Course: VMware vSphere 6.7

Schedule Notice.

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10/05/2021	vSphere Essentials	Assignment 01 - 1hr
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28/06/2021	Storage	
30/06/2021	Updates and Upgrades	Assignment 04 - 1hr
07/07/2021	Availability	
12/07/2021	Security	
19/07/2021	Backup and Recovery	Assignment 05 - 1hr
19/07/2021	Troubleshoot	
26/07/2021	Resource management	

Department of Information Technology
Value Added Course/Skill Enhancement Course
VMware vSphere 6.7 (RJITC07)
(Credits:2)

Prerequisite
The learner should have basic knowledge of virtualization.

About Course
The course aims to teach the basic and advanced concept of VMware vSphere 6.7. VMware vSphere is everywhere. Non-virtualized data centers are a thing of the past, and in order to stay relevant you must understand vSphere. This course is ideal for anyone who wants to learn vSphere, including absolute beginners.

Course Objective
The course is designed to give a complete overview of VMware vSphere 6.7. After completion of the course learners will be able to administer the VMware vSphere environment.

Course Description

Unit	Objective	Suggested Activities	Duration (Hours)	Mode of Assessment
I	To get a thorough understanding of vSphere hosts and VMs	Practical Implementation	5hr	Assignment
II	To learn vsphere networking concepts	Practical Implementation	4hr 30mins	Assignment
III	To understand different types of storage	Practical Implementation	4hr 30mins	Assignment
IV	To understand security measures, administer availability and learn about update manager features	Practical Implementation	5hr	Assignment
V	To manage resources and perform troubleshooting	Practical Implementation	5hr	Assignment

Course Modules

Unit /Module	Description
I	**vSphere Essentials:** Introduction to VMware vSphere Client and Hands-on-labs, Licensing Installed ESXi and vCenter, Basic ESXi Configuration and Management, Content Libraries, Update Manager **Deploying and Managing Virtual Machines and hosts:** Templates and Cloning, VMware Tools, OVF and OVA Templates, Snapshots, Auto Deploy and Host Profiles, Content Libraries, vCenter Converter, Working with VMX Files
II	**Networking:** Understand vSphere Networking Concepts, Configure vSphere Standard and Distributed Switches, Virtual Switch Features, NIC Teaming and failover, Port Mirroring, Network IO Control, Traffic Shaping, Private VLANs, TCP/IP Stacks, NetFlow
III	**Storage:** VMFS, NFS 3, NFS 4.1, iSCSI, FC and FCoE, LUN Masking and Zoning, vSAN, VVOLs, Storage Multipathing and failover
IV	**Security:** Single Sign-On, Hardening VMs and Hosts, Encrypted vMotion, Roles and Permissions **Updates and Upgrades:** Update Manager, Upgrade VMware Tool and VM Hardware, Upgrade ESXi, Upgrade vCenter, Migrate vCenter Server for Windows to the vCenter Server Appliance **Availability:** vSphere High Availability, vCenter High Availability, Admission Control, Heartbeat Datastores
V	**Resource Management:** Configuring vMotion Requirements, vMotion, Storage vMotion, and Shared-Nothing vMotion, Configuring DRS Clusters, DRS Affinity Rules, Overrides, and advanced settings, DRS Automation Levels and Resource Fragmentation, Resource Pools, Shares, Limits, and Reservations **Troubleshooting:** Collect Diagnostic Data, Generate Log Bundles, Restart ESXi Management Agents **Backup and Recovery:** vSphere Data Protection, vSphere Replication, High Availability (HA), Virtual Machine Component Protection (VMCP)

Text References:
Mastering VMware vSphere 6.7 by Nick Marshall, Sybex A Wiley Brand, 2019

Web References:
https://www.vmware.com/
https://docs.vmware.com/en/VMware-vSphere/index.html

Course Outcomes

	Description
CO1	To understand and deploy VMs and hosts on a vCenter Server using online hands-on-labs
CO2	Understand and implement networking concepts on vCenter Server.
CO3	Understand the various storage arrays and create datastores.
CO4	Create a secure environment, learn about high availability and update manager in vSphere.
CO5	Manage resources, perform troubleshooting and recover and backup data for protection.

Evaluation

Evaluation Type	Evaluation Scheme	Maximum Marks
Exercise	Practical Implementation Exercise	10
Assignment	Assignments based on Concepts	20
Examination	Multiple Choice Questions	20

Hindi Vidya Prachar Samiti's

RAMNIRANJAN JHUNJHUNWALA COLLEGE (AUTONOMOUS)

(Also known as R. J. College of Arts, Science & Commerce as per UGC Notification)

Affiliated to UNIVERSITY OF MUMBAI II Recognized by UGC under 2f & 12B
NAAC Accredited 'A GRADE' with CGPA 3.50

Knowledge is all Ambrosia

CERTIFICATE COURSE IN

VMware vSphere 6.7

www.rjcollege.edu.in

rjcollege@rjcollege.edu.in

+91 22 25151763

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Mumbai 400 086, Maharashtra, INDIA.

ABOUT US

Hindi Vidya Prachar Samiti was incepted on the auspicious day of Shri Krishna Janmashtami, 15th August 1938. A brain child of a visionary Late Shri Nandkishore Singh Jairamji, samiti was established with the objectives of catering to the educational needs of the Hindi speaking community. Ramniranjan Jhunjhunwala College came into existence in 1963, enabling a larger section of the society to take advantage of the facilities provided for higher education.

From 1999-2000 the College has added a number of self-financing courses like B.M.S., B.B.I., B.Sc. in Computer Science, Information Technology, Biotechnology, M.Sc. in Computer Science, Biotechnology and Information Technology as well as add on courses, which further hone the special skills of the students.

The college has been reaccredited with 'A' Grade by NAAC in 2014 with a CGPA 3.50 and received the Best College Award (2007-2008) of the University of Mumbai. The College has been bestowed with IMC "Ramkrishna Bajaj Performance Excellence Trophy", 2010.

The Principal of the college was awarded "Best Teacher" by Government of Maharashtra in 2011.

Government of Maharashtra conferred the college with "JAAGAR JAANIVANCHA" (First in Mumbai Suburban- in 2013 and Second in Mumbai Suburban- in 2014) for safety of girls.

Course Code: RJITC07

Duration: 30 hours

Credits : 02

ABOUT COURSE

The course aims to teach the basic and advanced concept of VMware vSphere 6.7. VMware vSphere is everywhere. Non-virtualized data centers are a thing of the past, and in order to stay relevant you must understand vSphere. This course is ideal for anyone who wants to learn vSphere, including absolute beginners.

COURSE OBJECTIVE

The course is designed to give a complete overview of VMware vSphere 6.7. After completion of the course learners will be able to administer the VMware vSphere environment.

COURSE OUTCOME

Description	
CO1	To understand and deploy VMs and hosts on a vCenter Server using online hands-on-labs
CO2	Understand and implement networking concepts on vCenter Server.
CO3	Understand the various storage arrays and create datastores.
CO4	Create a secure environment, learn about high availability and update manager in vSphere.
CO5	Manage resources, perform troubleshooting and recover and backup data for protection.

COURSE DESCRIPTION

Unit	Objective	Suggested Activities	Duration (Hours)	Mode of Assessment
I	To get a thorough understanding of vSphere hosts and VMs	Practical Implementation	5hr	Assignment
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COURSE OBJECTIVE

COURSE CONTENT

Unit/ Module	Description
I	vSphere Essentials: Introduction to VMware vSphere Client and Hands-on-labs, Licensing Installed ESXi and vCenter, Basic ESXi Configuration and Management, Content Libraries, Update Manager
	Deploying and Managing Virtual Machines and hosts: Templates and Cloning, VMware Tools, OVF and OVA Templates, Snapshots, Auto Deploy and Host Profiles, Content Libraries, vCenter Converter, Working with VMX Files
II	Networking: Understand vSphere Networking Concepts, Configure vSphere Standard and Distributed Switches, Virtual Switch Features, NIC Teaming and failover, Port Mirroring, Network IO Control, Traffic Shaping, Private VLANs, TCP/IP Stacks, NetFlow
III	Storage: VMFS, NFS 3, NFS 4.1, iSCSI, FC and FCoE, LUN Masking and Zoning, vSAN, VVOLs, Storage Multipathing and failover
	Security: Single Sign-On, Hardening VMs and Hosts, Encrypted vMotion,Roles and Permissions
IV	Updates and Upgrades: Update Manager, Upgrade VMware Tool and VM Hardware, Upgrade ESXi, Upgrade vCenter, Migrate vCenter Server for Windows to the vCenter Server Appliance
	Availability: vSphere High Availability, vCenter High Availability, Admission Control, Heartbeat Datastores
V	Resource Management: Configuring vMotion Requirements, vMotion, Storage vMotion, and Shared-Nothing vMotion, Configuring DRS Clusters, DRS Affinity Rules, Overrides, and advanced settings, DRS Automation Levels and Resource Fragmentation, Resource Pools, Shares, Limits, and Reservations
	Troubleshooting: Collect Diagnostic Data, Generate Log Bundles, Restart ESXi Management Agents
	Backup and Recovery: vSphere Data Protection, vSphere Replication, High Availability (HA), Virtual Machine Component Protection (VMCP)

EVALUATION

Evaluation Type	Evaluation Scheme	Maximum Marks
Exercise	Practical Implementation Exercise	10
Assignment	Assignments based on Concepts	20
Examination	Multiple Choice Questions	20

MEDIUM OF INSTRUCTION English

PASSING 40

100 MARKS

WHO SHOULD DO IT?

The learner should have basic knowledge of computer technology. No specific qualification needed. However understanding of a programming language will be advantageous.

Certificate of Completion

This is to certify that

Rajpal Divya

of   Class: **SCI-IT and** Roll no: **30**

has successfully completed the Value-Added Course in Mware Vsphere

organized by Department of Information Technology and conducted from 10-05-2021 to 26-07-2021.

Dr. Himanshu Dawda
In-charge Principal

COURSE CODE: RJITC07

STUDENT COMPLETED Certificate Course in VMWare vSphere 6.7 YEAR 20-21

SR NO	NAME	ROLL NO	CLASS
1	AGALE SNEHA	1	SCI-IT
2	BAKHTIANI RAHUL	3	SCI-IT
3	CHOUHAN AKANSHA	5	SCI-IT
4	DAWALE NEHA	6	SCI-IT
5	GADGE BHAGYASRI	8	SCI-IT
6	MISHRA SONIYA	10	SCI-IT
7	PAWAR SNEHA	11	SCI-IT
8	RAJBHAR SUREKHA	12	SCI-IT
9	RAJPAL DIVYYA	13	SCI-IT
10	SHARMA SIMRAN	14	SCI-IT

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